Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

CLAIMS 1. - 22. (CANCELED)

23. (NEW)

Method for dividing the bit rate of QPSK signals into at least two channels having band width limited filters in the modulator and the demodulator, by means of splitting the bit stream of the QPSK signals, comprising the following characteristics:

-- Transmitting the two bit streams by means of at least two filter branches ($\boldsymbol{P}_1\boldsymbol{P}_1$*; $\boldsymbol{P}_2\boldsymbol{P}_2$*), into at least one purely real spectrum ($\boldsymbol{P}_1$) and at least one purely imaginary spectrum ($\boldsymbol{P}_2$), by means of filters ($\boldsymbol{P}_1$* and $\boldsymbol{P}_2$*) that form pulse former pairs, whereby

-- the divided bit stream is transmitted at half the bit rate f_g and, for an expansion to multi-carrier systems, the alternating real and imaginary spectra are implemented by a low-pass filter ($\boldsymbol{P}_1$) and subsequent modulation with equidistant cosine and sine carriers, and

-- RSB filtering takes place, in which a purely imaginary transmission function (P_2) is determined from the difference of a low-pass having the band width f_g and of the low-pass P_1 having

the band width $f_g/2$, whereby

-- the zero places of the pulse responses in the two filter branches ($\boldsymbol{P_1 x P_1}$* and $\boldsymbol{P_2 x P_2}$*) lie at a multiple of $1/f_g$, and the transmitted bit rate lies at f_g, in each instance, and the spectra are band-limited;

-- Modulating the divided QPSK signals with a sine carrier or a cosine carrier, in each instance;

-- Transmitting the signal obtained in this manner to the receiver with demodulator, and demodulation of the signal;

-- Dividing the received signal by means of at least two filter branches with a purely real transmission function ($\boldsymbol{P_1}$*) and a purely imaginary transmission function ($\boldsymbol{P_2}$*) by means of at least two filter branches having filters ($\boldsymbol{P_1}$* and $\boldsymbol{P_2}$*) that form pulse former pairs, into at least two purely real spectra ($\boldsymbol{P_1 x P_1}$* and $\boldsymbol{P_2 x P_2}$*), whereby the divided signal is transmitted at half the bit rate f_g;

-- Demodulating the signals having the higher frequency by means of RSB demodulation and evaluation as a basic band signal.

24. (NEW)

Method as recited in claim 23, wherein the roots of the Nyquist flanks lie symmetrical to $\omega_g/2$ for the upper flank of P_1

and the lower flank of P_2, and lie at ω_g for the upper flank of P_2.

25. (NEW)

Method as recited in claim 24, characterized in that the pulse responses of the filter pairs are multiplied by the factor Ö2 after the division into the upper and lower frequency range, with overlapping Nyquist flanks at $\omega/2$.

26. (NEW)

Method as recited in claim 23, wherein the following functions

$$\sqrt{|H_s(\omega)|} = \sqrt{\sin \pi \frac{|\omega|}{\omega_g}}$$

are inserted on the transmitter side and/or the reception side, and additionally, a Hilbert filter is inserted in the P_2 branch, thereby achieving a duobinary or partial response coding.

27. (NEW)

Method as recited in claim 26, wherein on the transmitter side, the filters ($\boldsymbol{P}_1$ and $\boldsymbol{P}_2$) form a Hilbert pair, and on the reception side, the scanning samples of the reception-side

filters ($\boldsymbol{P}_1$* and $\boldsymbol{P}_2$*) are interchanged in terms of their places.

28. (NEW)

Method as recited in claim 26, wherein the filter ($\boldsymbol{P}_1$) is one having a root sine frequency passage in the range $-\omega_g ... \omega_g$ and that the filter ($\boldsymbol{P}_2$) is implemented by means of multiplication with j sign(ω) and the reception filters correspond to the transmission filters, but interchanged.

29. (NEW)

Method as recited in claim 26, wherein in the first filter branch, a low-pass ($\boldsymbol{P}_1$) is provided, and in the second filter branch, a band pass ($\boldsymbol{P}_2$) is provided, and that the pulse responses in the filter branches ($\boldsymbol{P}_2 \boldsymbol{x} \boldsymbol{P}_2$*) have a higher frequency than the pulse responses that belong to the product P_1^2 of the low-pass branches, and that these pulse responses at a higher frequency are evaluated by means of RSB demodulation in the basic band range.

30. (NEW)

Method as recited in claim 29, wherein the band pass ($\boldsymbol{P}_2$) in the second filter branch is implemented by means of RSB-modulation using the filter P_1.

31. (NEW)

Method as recited in claim 23, wherein in the case of multi-carrier systems, the real and imaginary channels alternate and that this is done by means of RSB-modulation with cosine and sine carriers.

32. (NEW)

Method as recited in claim 31, wherein the Nyquist flanks are made smaller at the carrier frequencies, in order to reduce the in-channel square cross-talk.

33. (NEW)

Method as recited in claim 23, wherein a cosine crest channel ($\boldsymbol{H}_c(\omega)$) is used, in order to completely avoid the cross-talk of the adjacent channels, whereby a remaining side band filtering is also carried out in order to form a duobinary coding.

34. (NEW)

Method as recited in claim 33, wherein the loss of approximately 3 dB that occurs in the case of duobinary transmission with pre-coding and dual-path rectification is avoided by means of Viterbi decoding.

35. (NEW)

Method as recited in claim 23, wherein the transmitter-side RSB filters are shifted into the basic band with the transmission function H_{RSB} and the transmission function is broken down into an even portion ($H_g(j\omega)$) and an odd portion ($H_u(j\omega)$), and the odd portion ($H_u(j\omega)$) is multiplied by j to restore a real time function ($jH_u(j\omega)$), before a conversion by means of a cosine carrier and a sine carrier takes place, and that the two portions are added or subtracted.

36. (NEW)

Method as recited in claim 35, wherein the flank of the RSB filters is designed as a root Nyquist flank and that on the reception side, the higher frequency portions that occur during demodulation are suppressed by means of simple low-pass filters.

37. (NEW)

Method as recited in claim 33, wherein the case of RSB modulation, the flank at the carrier is shaped in such a manner that after demodulation, a cos crest channel is obtained.